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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,168	07/26/2001	Atsushi Ishiwata	33587	7686

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EXAMINER

WOOD, WILLIAM H

ART UNIT PAPER NUMBER

2124

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/916,168	Applicant(s) ISHIWATA, ATSUSHI	
	Examiner William H. Wood	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-15 are pending and have been examined.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 7, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Admitted Prior Art**, found in Applicant's specification on pages 1-2.

Claim 1

APA disclosed an intermediate object linking method of linking a plurality of intermediate objects to form an executable object (*page 1, lines 12-18; page 2, lines 5-11*), comprising:

- ♦ an intermediate object linking order forming step which decides linking orders of the plurality of intermediate objects (*page 1, lines 12-18*);
- ♦ a linking processing step which executes linking processes of the plurality of intermediate objects based on the linking orders decided by the intermediate object linking order forming step to get an executable object (*page 1, lines 12-18*);

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- ♦ a comparing step which compares program size of the executable objects obtained by the linking processing step with the program size of a executable objects stored in a storing section every time when the linking order is changed (page 2, lines 5-11);
- ♦ obtained by the linking processing step is smaller than the program size of the executable objects stored in the storing section at the comparing step (*page 2, lines 5-11*); and
- ♦ a repeating step for changing the linking orders by the intermediate object linking order forming step and executing repeatedly the linking processing step, the comparing step, and the storing step (*page 2, lines 5-11; interpreted as re-executing above steps*).

APA did not explicitly state *a storing step for storing the program size of the executable objects and the linking order obtained by the linking processing step in the storing section to update when the program size of the executable objects.*

APA demonstrated that it was known at the time of invention to provide objects to compare as iterations are performed for optimization (page 2, lines 5-11). It would have been obvious to one of ordinary skill in the art at the time of invention to implement **APA** with such storing and updating linking orders every iteration in order to compare as suggested by **APA's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide abilities to accomplish the comparison from one moment to the next (page 2, lines 5-11).

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Claims 4, 7, 10, 13

The limitations of claims 4, 7, 10, 13 correspond to method claim 1 and as such are rejected in the same manner.

3. Claims 2-3, 5-6, 8-9, 11-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Admitted Prior Art**, found in Applicant's specification on pages 1-2 in view of **Goldberg**, "Genetic Algorithms".

Claims 2 and 3

APA did not explicitly state an intermediate object linking method according to claim 1, wherein the intermediate object linking order forming step decides the linking orders by a permutation/genetic algorithm. **Goldberg** disclosed that it was known at the time of invention to utilize permutation and/or genetic algorithms for processing a volume of information (page 1, section "Mechanics"). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the sorting/order determination of **APA** with permutation or genetic algorithms as found in **Goldberg**. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide known sorting/processing algorithms (and thus easily implemented) in order to efficiently prepare a new link order for the system of **APA** (**Goldberg**: page 1, section "Motivation").

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Claims 5-6, 8-9, 11-12 and 14-15

The limitations of claims 5-6, 8-9, 11-12 and 14-15 correspond to method claims 2-3 and as such are rejected in the same manner.

4. Claims 1, 4, 7, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Smaalders** et al. (USPN 5,790,865).

Claim 1

Smaalders disclosed an intermediate object linking method of linking a plurality of intermediate objects to form an executable object (*column 2, lines 51-60; column 12, lines 12-29*), comprising:

- ♦ an intermediate object linking order forming step which decides linking orders of the plurality of intermediate objects (*column 7, line 41 to column 12, line 8*);
- ♦ a linking processing step which executes linking processes of the plurality of intermediate objects based on the linking orders decided by the intermediate object linking order forming step to get an executable object (*column 12, lines 10-67*);
- ♦ a comparing step (*column 2, line 60 to column 3, line 12*);
- ♦ a storing step for (*column 2, line 60 to column 3, line 12*); and
- ♦ a repeating step for changing the linking orders by the intermediate object linking order forming step and executing repeatedly the linking

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processing step, the comparing step, and the storing step (*column 2, lines 57-60; interpreted as re-executing above steps*).

Smaalders did not explicitly state comparing executable size from iteration to iteration, saving the smallest. However, **Smaalders** demonstrated that it was known at the time of invention to work towards smaller code (column 2, lines 40-42; column 13, lines 1-25). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the optimal linking system of **Smaalders** with simply comparing code size to produce the smallest code as suggested by **Smaalders'** own teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to reduce cache misses, which smaller code would do naturally (column 13, lines 1-25), furthermore this implementation would be technically easier to implement (just comparing output code and not execution timing of output code).

Claims 4, 7, 10, 13

The limitations of claims 4, 7, 10, 13 correspond to method claim 1 and as such are rejected in the same manner.

5. Claims 2-3, 5-6, 8-9, 11-12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Smaalders et al.** (USPN 5,790,865) in view of **Goldberg**, "Genetic Algorithms".

Claims 2 and 3

Smaalders did not explicitly state an intermediate object linking method according to claim 1, wherein the intermediate object linking order forming step decides the linking orders by a permutation/genetic algorithm. **Goldberg** disclosed that it was known at the time of invention to utilize permutation and/or genetic algorithms for processing a volume of information (page 1, section "Mechanics"). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the sorting/order determination of **Smaalders** with permutation or genetic algorithms as found in **Goldberg**. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide known sorting/processing algorithms (and thus easily implemented) in order to efficiently prepare a new link order for the system of **Smaalders** (**Goldberg**: page 1, section "Motivation").

Claims 5-6, 8-9, 11-12 and 14-15

The limitations of claims 5-6, 8-9, 11-12 and 14-15 correspond to method claims 2-3 and as such are rejected in the same manner.

Response to Arguments

5. Applicant's arguments filed 19 October 2004 have been fully considered but they are not persuasive. Applicant argued: ¹⁾ there was no admission by Applicant of prior art; ²⁾ **APA** did not disclose comparing with a *stored* program size; ³⁾ there was no support in the prior art of *permutation* and *genetic*

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algorithms; and ⁴⁾ **Smaalders** did not disclose a comparing step. These arguments have been considered and found unpersuasive.

First, Applicant's specification reads, "An intermediate object linking method in the background art will be explained with reference to Fig. 6." Further, Applicant has provided no reason to believe the "background art" was only known to the Applicant, going so far as to even call it "art". This is an admission of "background art" or art which existed prior to Applicant's claimed invention and was known to others, which at very least is admissible under 35 U.S.C. § 102(a).

Second, when referring to **APA** page 2, lines 5-11 the passage clearly states smaller code size better and therefore multiple linking orders and executables necessary. The only known conclusion is multiple entities are being compared and multiple entities are inherently required to be stored in some manner within the system, which is operating upon them.

Third, see above clarified rejections for information upon permutation and genetic algorithms.

Fourth, the rejection states "**Smaalders** did not *explicitly* state comparing executable size from iteration to iteration, saving the smallest" (emphasis added). One, the rejection cited appropriate passages within **Smaalders**, which clearly disclose motivation for comparing code size in an effort to produce the smallest size. **Smaalders** does contain a compare step as indicated above, and **Smaalders** does provide motivation for reducing code size as it is faster. Two, at the very least, under the broadest reasonable interpretation of Applicant's

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claimed invention, **Smaalders** provided for indirectly comparing code size in so much as comparing speed, as faster code is smaller and smaller code is faster.

Thus, the rejections are maintained in view of Applicant's raised issues.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

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William H. Wood
February 22, 2005

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